

REMARKS

Claims 1 and 3-19 remain pending in the application. Claim 2 was previously canceled. Claim 1 has been amended. Claim 20 was previously canceled without prejudice.

Applicants note with appreciation the allowance of Claims 15-19.

The Office Action states that Claims 5, 9, 10 and 14 are objected to as being dependent upon a rejected claim, but would be allowable if rewritten in independent form including all the limitations of the base claim, i.e., Claim 1 and any intervening claims.

In order to advance the prosecution of the present application, Applicants have opted to incorporate in the rejected base claim 1 the limitation recited in claim 5.

Claims 1, 3-4, 6-8 and 13 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Hopcroft (U.S.P. 6,621,387) in view of Dabbaj [Publication No. 2004/0056742].

Applicants respectfully traverse this rejection for the following reasons.

1. The Office Action states that Hopcroft discloses “a MEMS having a plunger [410]”. Applicants submit that Hopcroft teaches the use of a conductive contact pad and makes no reference to a plunger [410]. As stated on col. 8, lines 24-27 Hopcroft states:

“The beam section 106a of the first bridge is deflected downward, therefore bringing the contact pad 410 in contact with the transmission line 110 on both sides of he gap.”

In contrast, Applicants recite on page 7, last paragraph:

“Metal contact electrode 30 is within cavity 250 and is physically attached to dielectric post (or plunger) 40, which in turn is physically attached to the membrane 60.”

Applicants submit that in order to advance the prosecution of the present application, they have opted to amend Claim 1 by stating that the post or plunger of the present invention consists of a dielectric post terminated in a conductive pad, thus further clarifying the nature of the post or plunger recited therein and further differentiate it from Hopcroft contact pad.

2. The Office Action states that Hopcroft teaches a MEMS comprising a flexible membrane [106a] (page 3 of the Office Action, line 2).

Applicants submit that this statement actually contradicts Hopcroft's teaching since Hopcroft forms the bridges on a separate substrate. Only then, the parts are joined together.

In contradistinction, Applicants teach that all the elements are constructed in a CMOS compatible sequence, wherein no substrate bonding nor any part transfer is permitted.

3. Hopcroft's "membrane", as the Office Action refers to it, is not a functional part of the MEMS switch, in contrast to the membrane taught by Applicants. Applicants have all the electrodes attached to the membrane, and the activation is produced by the interdigitation (interaction) between electrodes.

Hopcroft teaches 'the entire stack' to be the membrane, wherein the silicon is etched underneath the stack, not for switch construction, but to minimize RF losses into the silicon substrate, which is unrelated to the teaching of the present application.

4. Hopcroft claims CMOS compatibility in the fabrication but uses Cr/Au and polysilicon. Practitioners of the art will readily recognize that such a construction precludes any possibility of building the Back End Of Line (BEOL, i.e., personalization) which is necessary for a standard CMOS line.

Thus, Hopcroft's structure teaches away from the membrane taught by the Applicants since both the structure and the method of construction of the two differ from each other in all the major components.

Now, regarding the second reference by Dabbaj which teaches an electrostatic device used as actuator and sensor that includes a first flexible electrode and at least a second electrode mounted on the first electrode set to move with first electrode and causing deflection of the first electrode. Nowhere does Dabbaj make any mention of a MEM switch having a membrane provided with a plunger.

The rejection states that it would be obvious to combine the teachings of Hopcroft and Dabbaj. Yet, the Office Action combines the teaching of Hopcroft to Dabbaj. This assertion should be challenged. The rejection fails to support this assertion with any reason other than the implied reason that it would be obvious after reading the present application. However, such a hindsight construction is clearly not permitted.

Now, even if, *arguendo*, one were to combine the two references, i.e., Hopcroft and Dabbaj, the combination of two devices being incompatible to each other in the structure and construction, the combination of the two cannot possibly render claims 1, 3-4, 6-8 and 13 of the present application unpatentable, simply because nowhere it is described nor suggested how to combine such dissimilar devices which respective operations are incompatible with one another.

Thus, Applicants believe that in view of the foregoing arguments and amendments, they have overcome the rejection of claims 1, 3-4, 6-8 and 13, and respectfully request that the Examiner reconsider and withdraw the rejection of the cited claims under 35 U.S.C. 103(a) over Hopcroft in view of Dabbaj.

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The Office Action states further that Claims 5, 9, 10, and 14 stand objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitations and intervening claims.

Applicants believe that by having included in claim 1 the limitations recited in the now canceled claim 2, and by further distinguishing the plunger as being of dielectric material (in contrast to the conductive contact pad recited by Hopcroft), they have overcome the objections to claims 5, 9, 10 and 14. Thus, Applicants respectfully request that the Examiner reconsider and withdraw the objection of the stated claims.

Claim 20 stands rejected under 35 U.S.C. 102(b) as being anticipated by Goldsmith et al. (U.S.P. 5,619,061)

In response to the above rejection, Applicants had previously canceled without prejudice Claim 20. Applicants fail to understand why the previously canceled Claim 20 is being rejected a second time.

In view of the foregoing amendments, Applicants respectfully request that all the rejections to this application be reconsidered and withdrawn and that the Examiner pass all the pending claims to issue.

Should the Examiner have any suggestions pertinent to the allowance of this application, the Examiner is encouraged to contact Applicants' undersigned representative.

Respectfully submitted,

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